

96-321844/32 RHONE POULENC CHIM 94.12.23 94FR-015552 (96.07.04) C11D 3/08, 3/16, 3/37	A97 D25 (A26) RHON 94.12.23 *WO 9620268-A1	A(6-AE, 12-W12B) D(11-B11, 11-D1A)
Alkaline agent for protecting glass or crockery during washing - comprises siliceous polymer obtd. by condensation polymerisation of ammonium of alkali silicate with siliconate, siliconate condensate, or alkoxy:silane (Frn) C96-102539 N(AM AU BB BG BR BY CA CN CZ EE FI GE HU JP KG KP KR KZ LK LR LT LV MD MG MN MX NO NZ PL RO RU SG SI SK TJ TT UA US UZ VN) R(AT BE CH DE DK ES FR GB GR IE IT KE LS LU MC MW NL OA PT SD SE SZ UG) Addnl. Data: CUIF J, JOUBERT D 95.12.01 95WO-FR01583	soln., and/or (c) an alkoxy silane of formula (II), in amts. such that the ratio by wt. of Si from (B): total Si in the polymer is 0.0002-0.05 (0.003-0.006). The siliceous polymer had a loss on calcination at 700°C of 15-30 (18-28) wt.-%.	$R_nSi(OM)_p(OH)_{4-n-p}$ (I) $R_nSi(OR')_{4-n}$ (II) M = NH ₄ or an alkali metal (pref.); R = 1-20C (1-18C) hydrocarbon gp., opt. halogenated and opt. contg. O or N as heteroatoms; n + p = not above 4; n = 1-3; p = at least 1; and R' = 1-60 alkyl, pref. Me or Et.

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<u>USE</u> Glassware is washed in a dishwasher, using a detergent compsn. contg. 5-40 (10-40) wt.% of the alkaline agent. Deterioration of glass and crockery during repeated washing is reduced.	<u>PREFERRED AGENT</u> (A) is Na silicate. (B) are (a) 10 siliconates, including methyl-, hexyl- dimethyl-, methylpropyl- and methyloctyl-siliconates of Na or K, and their condensates, (b) methyltri(m)ethoxy-, octyltri(m)ethoxy- and diethylene diamine triethoxysilane, and (c) dimethyldi(m)ethoxy-, and trimethyl(m)ethoxy-silane.	wt.% of water. On mixing 99 pts. wt. (dry wt.) of 44.7% of Na silicate (SiO ₂ :Na ₂ O = 2) and 1 pt. wt. of a 45.1 soln. of Rhodorsil 51T (RTM: K methylsiliconate), the copolymerisation was spontaneous. The copolymer was sepd. giving a prod. with 24.5% loss at 700°C. Microscope slides were immersed in an aq. soln. contg. 5 g/l of the copolymer. Results were pH of soln., initial (A) 11.6, (B) 11.4; final, (A) 11.3, (B) 11.1; wt. change of glass, (A) -2.1mg, (B) 0 mg; appearance, (A) opaque film; (B) no visible corrosion. (HW) (24pp510DwgNo.0/0) SR:EP156380 EP431820 EP437988 US3337496 US4344860 WO95365338
<u>PREFERRED COMPOSITION</u> A detergent compsn., protecting glass and crockery, contains the siliceous polymer, pref. in amt. of 5-40% (10-40%), and also a builder, a bleach, an anti-incrustation agent and a filler.	<u>EXAMPLE</u> Microscope slides were immersed for 3 weeks at 60°C in an aq. soln. contg. 5 g/l of aq. Na disilicate (SiO ₂ :Na ₂ O = 2.1), contg. 55	WO 9620268-A